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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,813	03/04/2004	Jung Hoon Seo	1630-0138P	3656
2292	7590	03/22/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			MALDONADO, JULIO J	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/791,813	Applicant(s) SEO, JUNG HOON	
	Examiner Julio J. Maldonado	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 5-8 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 5-8 in the reply filed on 03/07/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

2. The disclosure is objected to because of the following informalities: in claim 5, Applicants recite, "...an oxygen-plasma-activated transparent electrode for extending an electric current formed on the top of the p-semiconductor layer...". However, according to the submitted disclosure, the p-semiconductor layer is plasma activated, not the transparent electrode. For purposes of the rejection, it is assumed that the claimed invention is directed to a plasma treated p-semiconductor layer.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hata et al. (U.S. 2002/0190263 A1) in view of Matsumoto et al. (U.S. 2003/0082893 A1).

Hata et al. (Fig.1) teach a light emitting device including a sapphire substrate (1); a III-V n-semiconductor layer (4), an activated layer (5), and a III-V p-semiconductor layer (9), formed in order, on top of the sapphire substrate (1); a transparent electrode (10); a p-pad electrode (11) formed on the top of the transparent electrode (10); and an n-pad electrode (12) formed on part of a mesa-cut section of the n-semiconductor layer (4) for extending an electric current (Hata et al., [0049] – [0056] and [0202]).

Hata et al. fail to teach plasma activating the p-semiconductor layer. However, Matsumoto et al. (Fig.3) teach a related light emitting device including a sapphire substrate (21); a III-V n-type semiconductor layer (22), an active layer (24, 25, 26), and a III-V p-type semiconductor layer (28) formed in order on top of the sapphire substrate (21), wherein the p-type semiconductor layer (28) is activated and wherein said activation step includes a plasma treatment (Matsumoto et al., [0018] – [0037]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hata et al. and Matsumoto et al. to enable a plasma activated p-type semiconductor layer in Hata et al. according to the teachings of Matsumoto et al. for the further advantage of removal of organic contaminants from the p-semiconductor (Matsumoto et al., [0033]).

Conclusion

5. Applicants are encouraged, where appropriate, to check Patent Application Information Retrieval (PAIR) (<http://portal.uspto.gov/external/portal/pair>) which provides

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applicants direct secure access to their own patent application status information, as well as to general patent information publicly available.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Julio J. Maldonado whose telephone number is (571) 272-1864. The examiner can normally be reached on Monday through Friday.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (571) 272-1907. The fax number for this group is 571-273-8300. Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.



Julio J. Maldonado
March 19, 2006

Julio J. Maldonado
Patent Examiner
Art Unit 2823



George Fourson
Primary Examiner